

A vertical bar on the left side of the slide with a color gradient from orange at the top to blue at the bottom.

BEBERAPA KASUS DALAM ANALISIS FAKTOR

A vertical bar on the left side of the slide with a color gradient from orange at the top to blue at the bottom.

CONTOH 1A

EFA → CFA

The psychometric properties and factor structure of a Welsh translation of the school short form of the Coopersmith Self-esteem Inventory

Peter R. Hills, Leslie J. Francis and Enlli Thomas University of Wales, Bangor

Self-esteem (SE) is a widely employed variable in many domains of psychology, including personality, health and health-related behaviours, and in clinical psychology, where it is usually found that those who are anxious or depressed exhibit low levels of SE. The construct is also widely used in educational psychology, where, perhaps by analogy with the clinical domain, it is generally assumed that pupils who do not meet the expectations of their teachers have low levels of SE. Rosenberg (1965) defined SE as a favourable or unfavourable attitude towards the self, but Blascovitch and Tomaka (1991) considered the construct to include behavioural and affective elements in addition to self-evaluation. Maslow (1970) identified satisfaction of the need for esteem as a contributory factor to positive psy-

Table 1 Oblique factor analysis of the Welsh translation of the school short form of the Coopersmith Self-esteem Inventory

<i>Code</i>	<i>M</i>	<i>SD</i>	<i>Item</i>	<i>F1</i>	<i>F2</i>	<i>F3</i>	<i>h²</i>
d22	0.67	0.47	I usually feel as if my parents are pushing me (–)	0.65			0.41
d20	0.83	0.38	My parents understand me	0.63			0.46
d09	0.78	0.42	My parents usually consider my feelings	0.54			0.34
d16	0.70	0.46	There are many times when I'd like to leave home (–)	0.52			0.32
d11	0.70	0.46	My parents expect too much of me (–)	0.51			0.27
d12	0.66	0.47	It's pretty tough to be me (–)	0.47			0.35
d13	0.67	0.47	Things are all mixed up in my life (–)	0.46			0.35
d04	0.58	0.49	<i>I can make up my mind without too much trouble</i>				0.11
d14	0.59	0.49	Kids usually follow my ideas		0.52		0.28
d08	0.66	0.47	I'm popular with kids of my own age		0.49		0.28
d06	0.84	0.37	I'm a lot of fun to be with		0.45		0.26
d19	0.65	0.48	If I have something to say I usually say it		0.40		0.18
d01	0.51	0.50	I often wish I were someone else (–)		0.38		0.29

A vertical bar on the left side of the slide with a color gradient from orange at the top to blue at the bottom.

CONTOH 1B

EFA → CFA

A Confirmatory Factor Analysis of the Threat Index

Marlin K. Moore and Robert A. Neimeyer
Memphis State University

The Threat Index (TI), a measure of death concern grounded in personal construct theory, was submitted to psychometric refinement. The factorability of the TI using the traditional split-match scoring was compared with methods based on Manhattan, Euclidian, standardized Euclidian, and Mahalanobis distance formulas. Statistical and substantive interpretability were enhanced with the standardized Euclidian factor structure. The LISREL VI program was used to determine the best model for the scale in an exploratory factor analysis. A nonhierarchical, $G + 3$ model met the criterion of goodness of fit >0.9 for the 1st subsample ($n = 405$). In a confirmatory factor analysis with a 2nd subsample ($n = 405$), the model was confirmed. Internal consistency and test-retest reliability were acceptable for Global Threat and 3 subfactors—Threat to Well-Being, Uncertainty, and Fatalism—and all subfactors were found to be independent of social desirability.

Since the early 1970s, psychologists have shown increasing interest in the area of death studies, particularly in the causes, correlates, and consequences of attitudes toward death. Neimeyer (1988) reported that some 528 published research arti-

In spite of their popularity, however, most frequently used death attitude questionnaires have serious psychometric deficiencies (Lester, 1967; Pollak, 1979; Simpson, 1980). Although most criticism has focused on validity and reliability issues.

Table 3

Final LISREL VI Standardized Solution for G + 3
Standardized Euclidian Distance Model of the Threat Index:
Factor Loading (Lambda) Matrix

Factor	Global Threat	Threat to Well-Being	Uncertainty	Fatalism
Healthy-Sick	.180	.616		
Strong-Weak	.256	.598		
Existence-Nonexistence	.079	.555		
Open-Closed	.396	.473		
Mentally Healthy-Crazy	.276	.469		
Happy-Sad	.390	.468		
Competent-Incompetent	.262	.456		
Feels Good-Feels Bad	.438	.434		
Secure-Insecure	.530	.381		
Concrete-Abstract	.203		.595	
Conforming-Nonconforming	.212		.557	
Changing-Static	.212		.522	
Specific-General	.241		.511	
Objective-Subjective	.221		.490	
Predictable-Random	.150		.457	
Animate-Inanimate	.204		.454	
Easy-Hard	.421		.360	
Learning-Not Learning	.113			.792
Hope-No Hope	.310			.629
Useful-Useless	.451			.617
Productive-Unproductive	.296			.604
Peaceful-Violent	.394			.383
Alive-Dead	.346			.369
Understanding-Not Understanding	.482			.337
Helping Others-Being Selfish	.494			.325

Note. $N = 810$.

A vertical bar on the left side of the slide with a color gradient from orange at the top to blue at the bottom.

CONTOH 1C

EFA → CFA

European Journal of Psychology of Education
2005, Vol. XX, n° 4, 343-353
© 2005, I.S.P.A.

Reanalyzing the 16pf-5 second order structure: Exploratory versus confirmatory factorial analysis

Anton Aluja

Angel Blanch

Luis F. García

University of Lleida, Spain

Table 1

Exploratory Factor Analyses with 3, 4, 5 and 6 factor solutions (N1=314, calibration sample)

		I	II	III	I	II	III	IV	I	II	III	IV	V	I	II	III	IV	V	VI
A	Warmth	.25	.76	-.05	-.27	.69	-.05	.12	-.47	.55	-.08	.08	.11	-.55	.51	-.11	.05	.01	.02
B	Reasoning	.00	.16	.05	-.06	.10	-.09	.09	-.21	-.01	-.04	.03	-.08	.01	-.03	-.01	.03	.05	.56
C	Emo. Stability	-.67	.05	.12	-.43	-.37	-.13	.31	-.07	-.36	-.14	.32	.41	-.13	-.36	-.14	.32	.34	-.10
E	Dominance	-.32	.03	-.12	.18	-.18	-.14	.79	-.08	-.20	-.15	.70	-.25	-.04	-.18	-.13	.69	-.21	.13
F	Liveliness	-.12	.50	-.41	-.32	.32	.35	.27	-.49	.15	.40	.20	.01	-.45	.12	.39	.18	.01	.23
G	Consciousness	.02	.05	.56	-.03	.01	-.60	-.06	.07	.06	-.70	-.03	.19	.03	.05	-.70	-.02	.13	-.09
H	Social boldness	-.45	.33	-.24	-.30	.01	.09	.53	-.20	.01	.03	.53	.24	-.36	.00	.01	.54	.11	-.18
I	Sensitivity	.47	.41	-.20	.07	.58	.14	-.07	-.05	.66	.01	-.02	.04	-.14	.65	.01	-.05	.02	-.05
L	Vigilance	.29	-.22	-.04	.45	.03	-.04	.01	.11	.02	-.02	-.02	-.45	.10	.03	-.02	.00	-.47	-.10
M	Abstracted	.43	-.21	-.62	.55	.18	.49	.04	.52	.50	.32	.17	-.17	.41	.53	.34	.14	-.12	-.18
N	Privateness	.26	-.44	.06	.47	-.16	-.06	-.16	.42	.00	-.10	-.12	-.21	.57	.03	-.06	-.11	-.05	.14
O	Apprehension	.76	.27	.09	.36	.64	-.18	-.22	-.06	.60	-.20	-.22	-.30	-.02	.59	-.20	-.23	-.26	.12
Q1	Open. to Change	.00	.17	-.47	.12	.18	.30	.38	.16	.38	.14	.49	.09	.18	.44	.17	.49	.19	.09
Q2	Self-reliance.	.12	-.68	-.06	.61	-.40	.02	-.03	.74	-.10	-.10	.09	-.18	.70	-.04	-.06	.09	-.11	-.19
Q3	Perfectionism	.05	.06	.41	.12	.08	-.61	.13	-.03	.04	-.59	.10	-.07	.03	.04	-.59	.12	-.06	.12
Q4	Tension	.29	-.14	-.14	.46	.09	.02	.12	-.07	-.01	.09	.08	-.71	-.05	-.02	.09	.11	-.77	.02
σ^2		19.0	16.0	10.4	19.0	16.0	10.4	8.8	19.0	16.0	10.4	8.8	7.5	19.0	16.0	10.4	8.8	7.5	6.8

Table 2

Fit Indices for 3, 4, 5, and 6 factor structures of the 16PF-5 (N2= 322, validation sample)

MODELS	χ^2	df	GFI	RMSEA	CFI	ECVI	Lo	Hi	a	b	
	Null	1296.50	120	.61	.17	–	4.14	3.80	4.51	–	–
3-F	SS	694.85	104	.79	.13	.49	2.36	2.11	2.63	Q3	M
	SL>.30	459.45	98	.85	.10	.69	1.66	1.47	1.88	–	–
	r_20	400.26	96	.86	.09	.74	1.49	1.31	1.70	–	–
	r_15	257.66	90	.91	.08	.86	1.08	0.95	1.25	–	–
4-F	SS	783.10	99	.76	.15	.42	2.67	2.40	2.96	–	–
	SL>.30	394.66	90	.86	.10	.74	1.51	1.34	1.72	–	–
	r_20	319.51	87	.89	.09	.80	1.30	1.14	1.48	–	–
	r_15	295.12	86	.90	.09	.82	1.23	1.08	1.41	–	–
5-F	SS	585.44	96	.81	.13	.58	2.08	1.85	2.33	–	–
	SL>.30	281.72	87	.90	.08	.83	1.18	1.03	1.35	–	–
	r_20	215.42	85	.93	.07	.89	0.98	0.86	1.13	–	–
	r_15	212.82	84	.93	.07	.89	0.98	0.86	1.13	–	–
6-F	SS	510.39	91	.84	.12	.64	1.87	1.66	2.10	B	G
	SL>.30	304.98	82	.89	.09	.81	1.29	1.13	1.46	B	–
	r_20	236.17	80	.92	.08	.87	1.08	0.95	1.24	B	–
	r_15	214.17	79	.93	.07	.89	1.02	0.89	1.17	B	–

Note. All χ^2 values are significant at the $p<0.001$ level. SS: Simple structure; SL>.30: Secondary loadings; r_20: Secondary loadings plus correlated error terms considering Modification Indices between covariance error terms >20; r_15: Secondary loadings plus correlated error terms considering Modification Indices between covariance error terms >15; a: Scale with measurement parameter fixed to 1; b: Scale with variance of error term fixed to 0.01.

A vertical bar on the left side of the slide with a gradient from orange at the top to blue at the bottom.

CONTOH 2

EFA dari berbagai instrumen

A FACTORIAL ANALYSIS OF SCALES MEASURING COMPETITIVENESS

JOHN M. HOUSTON, SANDRA A. MCINTIRE,
JUDY KINNIE, AND CHRISTEINE TERRY
Rollins College

This study examined the construct of competitiveness, which has been variously defined and operationalized by psychologists for more than 100 years, and its relation to other constructs. Four hypotheses regarding multidimensionality and related constructs were proposed and tested by administering 10 different paper-and-pencil measures to 140 undergraduate students. Two factor analyses (principal axis with varimax rotation) provided evidence of two factors that were labeled Self-Aggrandizement and Interpersonal Success. The results suggest that researchers should carefully define competitiveness and choose measures that reflect their own definition to improve interpretation of the results.

Table 4

Pattern Coefficients for One-, Two-, and Three-Factor Solutions for All Measures in the Study (N = 140)

Scale	One-Factor Solution		Two-Factor Solution			Three-Factor Solution			
	Factor 1	Extracted Communalities	Factor 1	Factor 2	Extracted Communalities	Factor 1	Factor 2	Factor 3	Extracted Communalities
CI	.834	.660	.598	.635	.733	.493	.539	.508	.848
CCAS	.666	.364	.843	-.133	.700	.837	-.114	.124	.694
CQ	.723	.447	.787	.008	.541	.782	.113	.109	.540
HCA	.753	.496	.819	.008	.617	.808	.107	.143	.615
PDCA	.594	.285	.235	.787	.603	.235	.848	.002	.739
SOQ	.842	.687	.617	.618	.750	.592	.647	.172	.762
WOFO	.858	.725	.748	.419	.697	.739	.466	.121	.726
DO	.377	.103	.002	.691	.280	-.109	.505	.631	.401
Nach	.491	.178	.478	.154	.179	.294	-.103	.834	.335
CL	.009	.005	-.464	.629	.351	-.482	.623	.001	.341

Note. CI = Competitiveness Index; CCAS = Competition-Cooperation Attitude Scale; CQ = Competitiveness Questionnaire; HCA = Hypercompetitiveness Attitude Scale; PDCA = Personal Development Competitiveness Attitude Scale; SOQ = Sports Orientation Questionnaire; WOFO = Work and Family Orientation Scale; DO = Dominance Orientation Scale of the California Psychological Inventory; Nach = Nach score; CL = Cooperative Learning subscale of the Classroom Life Scale.

A vertical bar on the left side of the slide with a color gradient from orange at the top to blue at the bottom.

CONTOH 3

CFA untuk instrumen

Confirmatory factor analysis of the Eating Disorder Examination-Questionnaire (EDE-Q)

Karina L. Allen ^{a,b,c,*}, Susan M. Byrne ^{a,b,c}, Amy Lampard ^b, Hunna Watson ^a, Anthea Fursland ^a

^a Centre for Clinical Interventions, Northbridge, Western Australia, Australia

^b School of Psychology, The University of Western Australia, Crawley, Western Australia, Australia

^c Telethon Institute for Child Health Research, Centre for Child Health Research, The University of Western Australia, Subiaco, Western Australia, Australia

ARTICLE INFO

Article history:

Received 3 September 2010

Received in revised form 17 November 2010

Accepted 17 January 2011

Available online 25 January 2011

Keywords:

Eating Disorder Examination-Questionnaire
Assessment

Eating disorders

ABSTRACT

Objective: To compare the goodness-of-fit of five models of Eating Disorder Examination-Questionnaire (EDE-Q) data, in clinical and community samples.

Method: The EDE-Q was administered to 228 eating disorder patients and 211 non-eating disordered university students. Confirmatory factor analysis was used to compare the validity of the original four EDE-Q subscales with that of brief one-factor, extended one-factor, two-factor, and three-factor models. Measurement invariance across the two samples was considered.

Results: The only model to provide an acceptable fit to the data was the brief one-factor model consisting of eight Weight and Shape Concern items. Scores on this scale correlated highly with the original EDE-Q subscales.

Conclusion: The reliability of the EDE-Q may be increased if a modified scoring system is used. This complements findings from recent research with the Eating Disorder Examination (EDE).

© 2011 Elsevier Ltd. All rights reserved.

Table 1

Fit statistics for alternate models of EDE-Q data in eating disordered and community participants.

	χ^2 (df)	RMSEA	GFI	AGFI	NFI	CFI
<i>22-item models</i>						
Four-factor model						
Eating disorder	1659.83 (203)**	.18	.61	.51	.83	.84
Community	1195.27 (203)**	.15	.66	.58	.92	.93
Three-factor model						
Eating disorder	1701.55 (205)**	.18	.60	.51	.84	.85
Community	1226.03 (205)**	.15	.65	.57	.91	.93
Two-factor model						
Eating disorder	1723.78 (207)**	.18	.60	.51	.84	.85
Community	1292.26 (207)**	.16	.64	.56	.91	.92
Full one-factor						
Eating disorder	2129.89 (208)**	.20	.55	.45	.82	.83
Community	1810.63 (208)**	.19	.56	.47	.89	.91
<i>Brief 8-item model</i>						
Brief one-factor						
Eating disorder	148.13 (19)**	.17	.86	.74	.94	.94
Community	150.09 (19)**	.18	.85	.71	.95	.95

Note. EDE-Q = Eating Disorder Examination-Questionnaire, RMSEA = Root Mean Square Error of Approximation, GFI = Goodness of Fit Index, AGFI = Adjusted Goodness of Fit Index, PGFI = Parsimony Goodness of Fit Index; NFI = Normed Fit Index, CFI = Comparative Fit Index.

** $p < .001$.

A vertical bar on the left side of the slide with a gradient from orange at the top to blue at the bottom.

CONTOH 4

Meninjau Instrumen dari Teori Lain

An Independent Confirmatory Factor Analysis of the Wechsler Intelligence Scale for Children—Fourth Edition (WISC–IV) Integrated: What Do the Process Approach Subtests Measure?

Nicholas Benson and David M. Hulac
The University of South Dakota

Joshua D. Bernstein
Carlow University

The Wechsler Intelligence Scale for Children—Fourth Edition (WISC–IV) Integrated contains the WISC–IV core and supplemental subtests along with process approach subtests designed to facilitate a process-oriented approach to score interpretation. The purpose of this study was to examine the extent to which WISC–IV Integrated subtests measure the constructs they are purported to measure. In addition to examining the measurement and scoring model provided in the manual, this study also tested hypotheses regarding Cattell-Horn-Carroll abilities that might be measured along with other substantive questions regarding the factor structure of the WISC–IV Integrated and the nature of abilities measured by process approach subtests. Results provide insight regarding the constructs measured by these subtests. Many subtests appear to be good to excellent measures of psychometric *g* (i.e., the general factor presumed to cause the positive correlation of mental tasks). Other abilities measured by subtests are described. For some subtests, the majority of variance is not accounted for by theoretical constructs included in the scoring model. Modifications made to remove demands such as memory recall and verbal expression were found to reduce construct-irrelevant variance. The WISC–IV Integrated subtests appear to measure similar constructs across ages 6–16, although strict factorial invariance was not supported.

Keywords: Wechsler Intelligence Scale for Children—Fourth Edition, cognitive assessment, confirmatory factor analysis, neuropsychological assessment, process approach

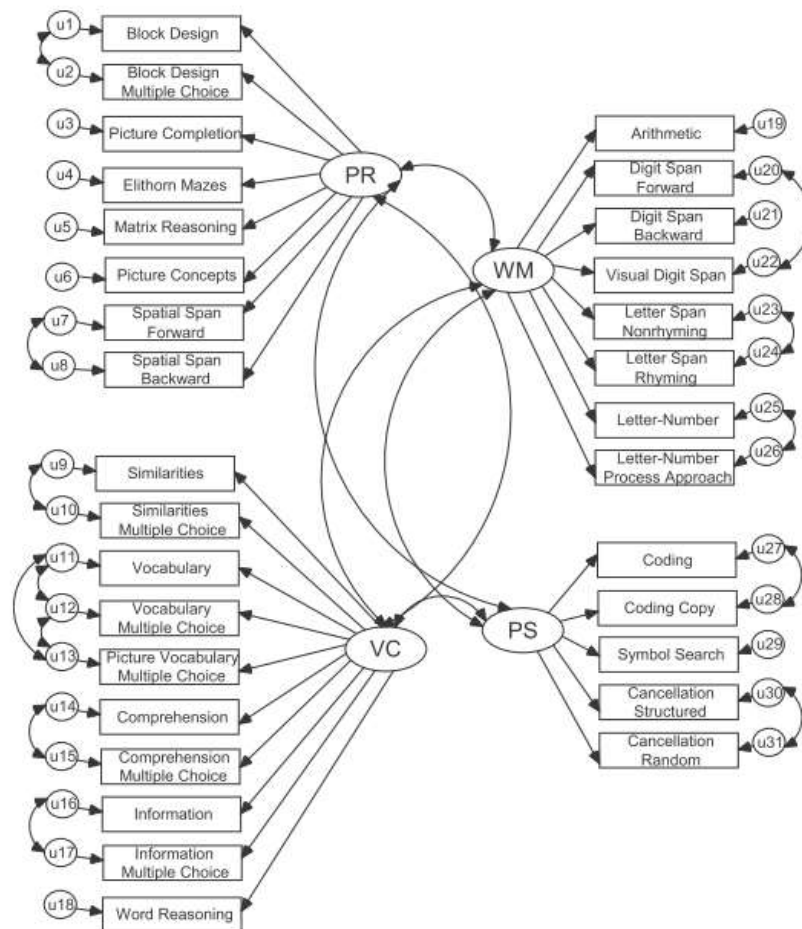


Figure 1. Initial measurement model for the Wechsler Intelligence Scale for Children—Fourth Edition Integrated. u = unique and error variance; PR = Perceptual Reasoning; WM = Working Memory; VC = Verbal Comprehension; PS = Processing Speed.

WISC-IV INTEGRATED PROCESS APPROACH SUBTESTS

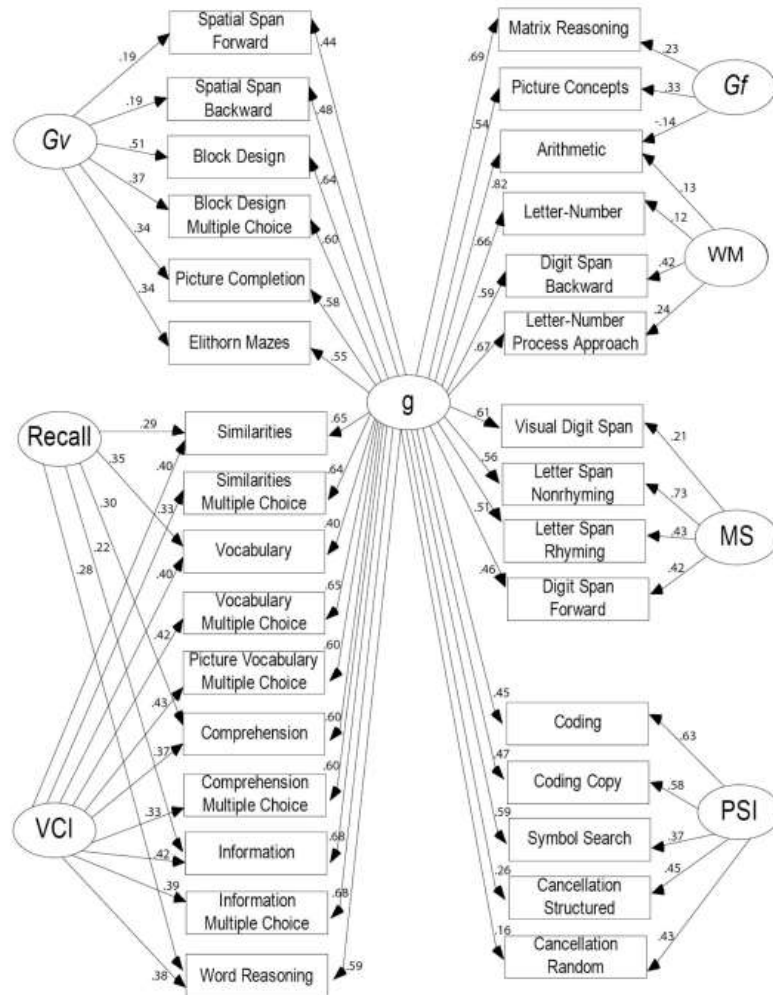


Figure 3. Direct hierarchical model for the Wechsler Intelligence Scale for Children—Fourth Edition Integrated with factor loadings; unique and error variance terms for subtests are omitted for visual clarity. *Gv* = visual processing; *Gf* = fluid reasoning; *WM* = Working Memory; *MS* = Memory Span; *VCI* = Verbal Comprehension index; *PSI* = Processing Speed index.

Table 3
Summary of Alternative Model Evaluation

Model	$\chi^2(df)$	$\Delta\chi^2$	Δdf	p	BIC	ΔBIC	AIC	CFI	RMSEA	SRMR
1. Initial first-order structural model	1077.801 (415)				1611.838		1239.801	.945	.047	.047
2. SSp subtests loading on PR	1030.410 (415)				1564.446	47.392 ^a	1192.410	.949	.045	.044
3. PR separated into Gf and Gv	987.923 (411)	42.487 ^b	4	<.01	1548.332	16.114 ^b	1157.923	.952	.044	.043
4. Perfect correlation between Gf and Gv	1235.773 (412)	-247.850 ^c	1	<.01	1789.589	-241.257 ^c	1403.773	.932	.052	.093
5. WM separated into MS and WM	937.267 (406)	50.656 ^c	5	<.01	1530.641	17.691 ^c	1117.267	.956	.042	.043
6. Perfect correlation between MS and WM	1071.255 (407)	-133.988 ^d	1	<.01	1658.036	-127.395 ^d	1249.255	.945	.047	.068
7. Plus Recall factor	839.978 (401)	97.289 ^d	5	<.01	1466.317	64.324 ^d	1029.978	.964	.039	.041
8. Plus Recognition factor	809.254 (396)	30.724 ^e	5	<.01	1468.559	-2.242 ^e	1009.254	.966	.038	.041
9. Plus AR on WM cross-loading	809.034 (400)	30.944 ^e	1	<.01	1441.996	24.321 ^e	1001.034	.966	.037	.040
10. Plus EM on WM cross-loading	808.797 (399)	.237 ^f	1	.63	1448.332	-6.336 ^f	1002.797	.966	.038	.040
11. Plus EM on PS cross-loading	808.715 (399)	.319 ^f	1	.57	1448.241	-6.248 ^f	1002.715	.966	.038	.040
12. Plus SSpF on MS cross-loading	806.549 (399)	2.485 ^f	1	.11	1441.074	.022 ^f	1001.549	.966	.038	.040
13. Plus SSpB on WM cross-loading	808.565 (399)	.469 ^f	1	.49	1448.090	-6.094 ^f	1002.565	.966	.038	.040
14. Higher order g factor	934.738 (409)	-125.704 ^f	9	<.01	1508.323	-66.327 ^f	1108.728	.956	.042	.046
15. Direct hierarchical model	812.599 (385)	-3.565 ^f	15	.99	1544.427	-102.431 ^f	1034.599	.964	.039	.037

Note. BIC = Bayesian information criterion; AIC = Akaike's information criterion; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standardized root-mean-square residual; SSp = Spatial Span; PR = Perceptual Reasoning; Gf = fluid reasoning; Gv = visual processing; WM = Working Memory; MS = Memory Span; AR = Arithmetic; EM = Elithorn Mazes; PS = Processing Speed; SSpF = Spatial Span Forward; SSpB = Spatial Span Backward.

^a Compared with initial structural model. ^b Compared with Model 2. ^c Compared with Model 3. ^d Compared with Model 5. ^e Compared with Model 7. ^f Compared with Model 9.